KILLER HARDWARE TIPS

Too Cool To Follow Rules

IF YOU'RE A USER WHO CAN'T LEAVE THINGS ALONE IF THERE'S A CHANCE YOU CAN MAKE THEM BETTER, EVEN IF IT MEANS BUCKING THE NORM, READ ON. WE HAVE some tips and tricks that just might make you more productive.

We Don't Need No Stinkin' Badges

A case badge is a tiny, 1-inch-square piece of real estate on a PC's front that most users pay little attention to. It can be, however, the signature of your PC.

If you're ready to change the corporate logo that's marring your PC's face, replace it inexpensively and easily with something better suited to you. Sites such as PC Case Gear (www.pccasegear.com) sell dozens of badges, with logos extolling the virtues of Linux, pirates, and more.

You can also rev the badge up using a light kit, which shines through a clear badge or provides eerie backlighting to an opaque badge. Kits are available from online sellers such as Gamerz Stuff ($12; www.gamerzstuff.com/badgelite) and Directron.com ($9;www.directron.com/badgelight.html).

Adding a light badge to your PC's box is one of the easiest case mods there is.

Kits usually include a LED mounted to a 1-inch square of white plastic, a four-pin power supply unit cable, and self-adhesive paper. Installation entails connecting the LED's power cable to a hard drive power connector, drilling an installation hole where you want the badge, and installing the light. (You can also place the badge in a blank drive bay cover.) Finally, stick on your self-adhesive badge. Dan's Data Web site has an installation guide at www.dansdata.com/badgelite.htm.

You can also print your own logos using adhesive labels. You'll need a clear cover that instantly turns the sticker into an authentic PC badge. Try www.directron.com/clearbadge.html for cover options.

Four badge choices from PC Case Gear. This square inch of PC real estate is a great place to exercise your right to liven up your PC's case.

Hack The Xbox

As long as there have been video game consoles, there have been users pushing what consoles can do. From Game Genie (added lives and hidden features to Nintendo games) to Starpath Supercharger (increased Atari 2600 RAM from 128 bytes to a whopping 6,272 bytes), users have expanded their consoles' capabilities.

This pattern continues for the Xbox. Perhaps the most popular method of Xbox modding is with a mod chip, a hardware hack that tricks the CPU into doing things Microsoft didn't intend.

Two brands of Xbox mod chips include Xtender (www.xtender.info) and Enigmah X. The maker of the Enigmah chip has gone out of business, but the chip is still available from many resellers. Both chips let users play imported and copied games, run custom code, and use CD-R, CD-RW, DVD-R, and DVD-RW media.

Using a mod chip, an Xbox can run "unsigned" code or programs without Microsoft's encrypted stamp of approval. Such code lets developers home brew custom software.

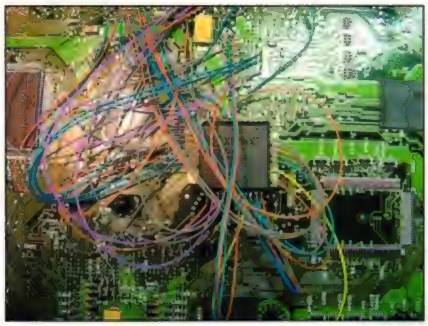
It almost goes without saying that one group is working on porting Linux to the Xbox. The Xbox Linux Project (xbox-linux.sourceforge.net) aims to create a version of GNU/Linux for the Xbox, letting users use the console as an ordinary computer. The project is still in the early stages—there is barely a working bootloader—but it ultimately could make home-brew game development easier or let you use the Xbox as an inexpensive server machine.

For movie buffs, Xbox mod chips disable Macrovision copy protection for DVDs. Neither chip will let you play DVDs from outside your region, however. For that, you need an official DVD kit from Microsoft for each region you want. However, the mod chips include a region reset function that prevents the Xbox from being locked into a single region.

The cost of the chips is about the same. At Lik Sang International (lik-sang.com) based in Hong Kong, the Enigmah X is

about $69 and the Xtender about $79. U.S. company GameGizmo.com (www.gamegizmo.com) sells a nonsocketed version of the Enigmah chip for $35 and an onboard, socketed version for $69.

The chips aren't PnP, so be prepared to open your Xbox and solder as many as 29 wires to the motherboard. "Installing a mod chip is not really easy," says Alex Wong, Lik Sang customer support executive.



With a mod chip installed, an Xbox motherboard is obscured by a maze of wires.

Image courtesy of GameGizmo

John Jury, business development manager at GameGizmo.com, says, "You definitely need soldering experience." Although none of his customers have killed their Xbox attempting to modify it, "I won't rule it out that it can't happen," Jury says.

You can also buy a unit already modded by a pro. Lik Sang sells such Xboxes with Enigmah for $339 (about $140 more than a vanilla Xbox from a U.S. retailer).

Although mod chips are generally synonymous with console game piracy, that generally hasn't been the case with Xbox mod chip buyers, says Jury. "It's not so much about pirating games because there really is no way for most home users to copy games. A lot of our customers are interested in home-brew development. They're getting this because they want to program or port an emulator over to the Xbox."

"Most mod chips go to developers or people who want to start programming for the Xbox," Wong says.

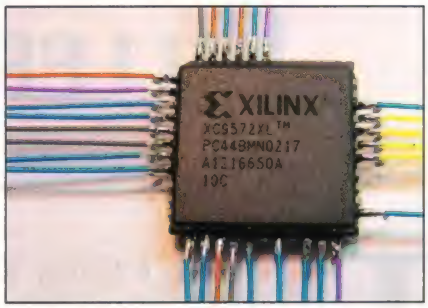
Once you decide to chip your console, you need a mod chip. From a player's perspective, "All the chips are the same," Jury says. "It's not like the Playstation 2 where you have 12 models of mod chips that all do different things. For the Xbox, they all pretty much do the exact same thing." From a shopper's perspective, consider the Xtender, which is still supported by its maker. Enigmah's features are still popular, but its price may rise as supplies dwindle.

Although functionality is similar, there are technical differences. "The most popular one seems to be the Enigmah," says Wong. "It is actually the same as the Xtender, but the [Xtender's] small disadvantage is that the BIOS needs to be identified and configured via a solder-jumper before you install it."

"Enigmah seems to patch the Xbox ROM on the fly. Xtender is a replacement hacked ROM and contains Microsoft copyright code, so Enigmah is preferable for legal reasons," says Dan Johnson, founder of XboxHacker.Net. Other mods don't involve a mod chip. The "resources" section of XboxHacker.net lists several types, including enhancing video output and disabling the parental lock function.

"There have been circuits developed to get VGA output from the Xbox. There was a tutorial on the XboxHacker BBS about tweaking the DVD drive to read CD-Rs by adjusting the gain. Files can be taken from the Xbox hard drive and the nickname of the Xbox edited," Johnson says.

Other Web resources include The Xbox Forums (www.worldxbox.co.uk), XboxHacker.com (xboxhacker.com), and Xbox Hackz (xboxhackz.com).



Installing the Enigmah mod chip isn't for the faint of heart; it can require 29 solder points on the chip and Xbox motherboard.

Image courtesy of GameGizmo

For multiplayer gaming, unofficial online communities may prove interesting. XBConnect (www.xbconnect.com) and XpluggedIn.com let you play online games against far-off opponents. Both run on a Windows PC (Linux and Mac OS X versions are planned). Connect your Xbox to a PC and the software tunnels Xbox data through the Internet connection. Both apps are free and have been running for months. Microsoft's online gaming system, Xbox Live (www.xbox.com/live), is still in beta. CPU

by Kevin Savetz

Infinite Loop

Fast & Furious

In June 2002, Top500.org released its semi-annual list of the most powerful supercomputers on the planet. NEC's Earth Simulator tops the list this time around. The computer can process 35.86 teraflops per second, blowing away the competition. IBM's Blue Ocean computer would have debuted at number three but wasn't announced before the deadline. Here is Top500.org's official top five ranking.

Top 5 Supercomputers*

Manufacturer	Computer	Location	Max Tfps
NEC	Earth Simulator	Earth Simulator Center, Yokohama, Japan	35.86
IBM	ASCI White	Lawrence Livermore National Laboratory, San Francisco, Calif.	7.22
Hewlett-Packard	TeraScale	Pittsburgh Supercomputer Center, Pittsburgh, Pa.	4.46
Hewlett-Packard	Tera	CEA, Bruyeres-le-Chatel, France	3.98
IBM	SP Power3	NERSC/LBNL, Berkeley, Calif.	3.05

*As ranked by Top 500 Supercomputer Sites, June 2002